

KNOWLEDGE OF AND ADHERENCE TO PAP SMEAR SCREENING OF PUBLIC SCHOOL STUDENTS ATTENDING EVENING COURSES

CONHECIMENTO E PRÁTICA DO EXAME PAPANICOLAOU ENTRE ESTUDANTES DE ESCOLAS PÚBLICAS DO PERÍODO NOTURNO

CONOCIMIENTO Y PRÁCTICA DE LA PRUEBA DE PAPANICOLAOU ENTRE ESTUDIANTES DE ESCUELAS PÚBLICAS DEL TURNO NOCTURNO

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ABSTRACT

This study's objective was to verify the effectiveness of an educational intervention addressing the Pap Smear Screening, implemented among students. This quasi-experimental study was conducted with individuals attending evening courses: high school, a youth and adult education program, and a teaching preparation program offered at stated-owned public schools. An instrument was initially applied to identify the participants' prior knowledge. Then, an educational intervention addressing the Pap Smear Screening was implemented and the instrument was reapplied. Most participants reported having had sexual intercourse (92.6%) and having a sexual partner (76.1%). The need for Pap testing was an important question, considering that 102 (18.9%) participants reported they had never been tested before. The statistical analysis revealed that knowledge improved after the intervention. This study's results show that women do not have complete knowledge concerning Pap Smear Screening and do not take the test regularly. There is a need to disseminate information regarding this topic of extreme importance to various populations.

Keywords: Health Education; Nursing; Papanicolaou Test; Women's Health.

RESUMO

Este estudo objetivou verificar a eficácia de atividades educativas realizadas com estudantes a respeito do Papanicolaou. Trata-se de estudo quase-experimental desenvolvido com estudantes do ensino médio, Educação de Jovens Adultos e Magistério do período noturno de escolas públicas. Inicialmente, foi aplicado um instrumento com o intuito de verificar o conhecimento prévio. Em seguida, realizou-se uma atividade educativa relativa ao Papanicolaou e depois o instrumento foi reaplicado. Os resultados revelaram que a grande maioria da população estudada afirmou já ter tido relação sexual (92,6%) e possuir parceiro (76,1%). A necessidade de se fazer o Papanicolaou foi uma questão importante, já que 102 (18,9%) mulheres disseram nunca o terem realizado. Os testes estatísticos mostraram que após a atividade educativa houve acréscimo no conhecimento. As evidências apresentadas neste estudo mostram que o conhecimento e a prática do Papanicolaou não são completos entre as mulheres. Destaca-se a necessidade da transmissão de informações referentes ao tema, que é de extrema importância para as diversas populações.

Palavras-chave: Educação em Saúde; Enfermagem; Teste de Papanicolaou; Saúde da Mulher.

RESUMEN

El objeto del presente estudio fue comprobar la eficacia de actividades educativas realizadas con estudiantes sobre la prueba de Papanicolaou. Se trata de una investigación cuasiexperimental realizada con estudiantes de la enseñanza secundaria, educación de jóvenes adultos y magisterio del turno nocturno de escuelas públicas. Primero se utilizó una herramienta con la finalidad de comprobar el conocimiento previo. Luego se realizaron actividades educativas relativas al Papanicolaou y, después, se volvió a utilizar la herramienta. Los resultados indicaron que la gran mayoría de la población objeto de estudio afirmó ya haber tenido relaciones sexuales (92,6%) y tener pareja (76,1%). La necesidad de hacer la prueba de Papanicolaou fue una cuestión importante: 102 (18,9%) mujeres dijeron nunca haberla realizado. Las pruebas estadísticas mostraron que las actividades educativas agregaron más información sobre el tema. Las evidencias de este estudio apuntan que el conocimiento es insuficiente y que la práctica del Papanicolaou no es tan usual entre las mujeres. Se destaca la necesidad de transmitir información referente a este asunto debido a su gran importancia para las distintas poblaciones.

Palabras clave: Educación en Salud; Enfermería; Prueba de Papanicolaou; Salud de la Mujer.

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INTRODUCTION

According to a document published by the World Health Organization (WHO), cancer (CA) is currently considered a public health problem, especially in developing countries, where an increase of 80% is expected until 2025, with more than 20 million new cases.¹

Cancer has currently gained attention in Brazil and political and technical agendas in the government sphere have given priority to this disease as the Brazilian Mortality Information System (SIM) reports CA is the second cause of death caused by diseases in the country.²

Recent world estimates report that cervical CA is the fourth most incident malign neoplasia among women, greatly contributing to the disease burden and standing out as the second cause of death due to cancer.¹

Even though Pap Smear Screening was introduced in Brazil in the 1950s, cervical CA still represents a public health problem.² According to the latest world estimate, cervical CA accounted for the death of 265,000 women in 2012, while 87% of the deaths occurred in developing countries. The number of new cases of cervical CA estimated by the Brazilian National Institute of Cancer (INCA) for 2016/2017 in Brazil is 16,340, with an estimated risk of 16.34 cases for every 100,000 women.¹

This information shows that health workers have much to do in terms of promoting the health of the population and preventing the disease.³ Despite the high incidence of cervical CA, there has been a decrease in the number of new cases. This result is mainly due to the coverage of screening programs, considering that early detection, enabled by the Pap Smear Screening, associated with the early treatment of intra-epithelial lesions, has decreased the incidence of cervical CA and significantly impacted morbidity and mortality rates.⁴

Therefore, it is essential to discuss methods that efficiently screen for this neoplasia, such as: effective coverage, proper collection of samples, quality interpretation of samples, and proper treatment and follow-up, so that women motivated to perform regular Pap testing find services that are sufficient in number and fully able to meet this need around the country.⁵

Current guidelines recommend that women who have already started sexual activity initiate Pap testing at the age of 25 years old and ceases it at the age of 64 years old after testing negative twice and consecutively in the last five years.⁶ Mortality caused by cervical CA among women aged between 25 and 64 years old has decreased because Pap Smear Screening presents a sensitivity of 97%.²

For adherence to Pap tests to increase and be effective, campaigns are needed, so that the staffs of primary healthcare units need to actively seek women and implement educational actions that go beyond healthcare units in order to emphasize the importance of Pap testing and its frequency.⁷

In this sense, health education, being an activity under the nursing staff's responsibility, has been increasingly discussed. According to a recent study, educational activities are the interventions most frequently used in scientific studies to increase the adherence of women to Pap testing, considering that education interventions are a low-cost method well accepted by the female population, which can be performed in various different settings.⁸

Even though preventive testing of cervical CA is widely disseminated, knowledge about it is not complete or homogeneous.^{9,10} Educational activities promote improved knowledge on this topic¹⁰ and the nursing staff plays an essential role in implementing care and educational practices to train individuals and encourage them to get tested.¹¹

Therefore, health educational actions are important strategies to encourage self-care among women, enabling them to become active subjects of their own health-disease continuum in addition to increasing the regularity and adherence to Pap testing and decreasing mortality and morbidity caused by cervical CA.

The previous discussion justifies the need to identify women's knowledge about and adherence to Pap testing. From this perspective, this study's objective was to verify the efficacy of health education actions addressing the Pap Smear Screening implemented among individuals attending evening courses: high school, a young and adult education program and a teaching preparation program, aiming to decrease morbidity and mortality rates due to cervical CA.

METHOD

This before-and-after quasi-experimental study originated from a Master's thesis. The study was implemented among students aged 18 years old or older attending evening courses: high school, a young and adult education program, and a teaching preparation program offered by state-owned public schools located in Uberaba, MG, Brazil. The participants provided their consent by signing free and informed consent forms.

There are currently 23 public schools with evening programs in Uberaba, but only 20 schools met the inclusion criteria, so that 540 female students regularly enrolled in evening courses: high school, a young and adult education program, and a teaching preparation program, answered the instrument. The intervention was implemented from February to March 2014.

The participants were identified and contacted at their schools, where data were collected. The procedures respected the participants' privacy, that is, only women were allowed. The questionnaires were completed individually and the participants were ensured their identities and information would remain confidential.

The authors developed a self-report instrument structured with open and closed questions addressing knowledge

and adherence to the Pap Smear Screening based on theoretical references, in addition to manuals, standards, and guidelines provided by INCA. The instrument was submitted to the analysis of three nurse experts with a doctoral degree who were knowledgeable in the field of face and content validation.

The instrument was initially applied to the participants in order to verify their prior knowledge on the topic. Afterwards, an educational activity addressing Pap testing was held in the same room, after which the instrument was reapplied to measure recently acquired knowledge and compare it to previous knowledge.

Women were asked to compose a single group in each school and the intervention was implemented only once in each school. The educational activities lasted 45 minutes on average and were based on a dialogue and exchange of knowledge between the researcher and participants. Educational resources included the verbal explanation of Pap Smear Screening and audiovisual resources such as banners, Pap Smear simulators and a demonstration of inputs used during the test.

Data were processed using double data entry and validated in Microsoft Excel® and later analyzed in the Statistical Package for the Social Sciences (SPSS) version 20.

Quantitative variables were analyzed using central tendency measures and mean variability, standard deviation, median and range. Simple frequencies were obtained for the qualitative variables and contingency tables were developed for the bivariate analysis.

The responses provided before and after the educational intervention were compared to verify whether the level of the participants' knowledge had improved and how effective the educational intervention was.

A Paired t-test was performed using the scores the participants obtained before and after the intervention, together with Cohen's *d* to assess the effect magnitude of the intervention and its educational potential. The McNemar test was used to assess each of the questionnaire's items that concerned Pap Smear Screening in order to measure whether there was an increase in knowledge after the intervention. The level of significance was established at $\alpha=0.05$. The results were organized in bivariate tables and discussed considering specific literature in the field.

The study was submitted to and approved by the Institutional Review Board at the Federal University of Triângulo Mineiro (UFTM); protocol CEP/UFTM: 2585. Ethical guidelines concerning research involving human subjects provided by Resolution 196/96 were complied with. The study was approved before the enactment of Resolution 466/12.

RESULTS

The 540 participants were aged 27.97 years old on average, with a median of 24 years, standard deviation of 10.25 years,

ranging from 18 to 65 years old. Most (63.3%) students were aged between 18 and 29 years old (Table 1).

Table 1 - Sociodemographic characteristics of students attending evening courses in public schools. Uberaba, MG, Brazil 2014

Variables		N	%
Age group	18 to 29 years old	342	63.3
	30 to 39 years old	116	21.5
	40 a 49 years old	56	10.4
	50 a 59 years old	23	4.2
	60 years old or older	3	0.6
Origin	Uberaba	490	90.7
	Other	50	9.3
Grade	10 th grade	33	6.1
	11 th grade	44	8.1
	12 th grade	114	21.1
	Youth and adult education program	184	34.1
	Teacher preparation program	165	30.6
Profession/ occupation	Administration	45	8.3
	Technical, scientific, artistic or similar	54	10.0
	Agriculture, livestock, animal or vegetal extractive production	1	0.2
	Processing industries or civil construction	5	0.9
	Trade or auxiliary activities	56	10.4
	Transportation or communication	3	0.5
	Service provision	102	18.9
	National defense or public security	1	0.2
	Poor defined or non-reported occupations	56	10.4
	Non-paid occupations	215	39.8
	Pensioner or retired	2	0.4
Marital Status	Married	162	30.0
	Single	253	46.9
	Divorced/separated	30	5.5
	Widowed	7	1.3
	Has a stable partner	88	16.3

Source: data collected by the author (2014).

Most women came from the city of Uberaba (90.7%) and most studied in the youth and adult education program (34.1%), though the other programs also presented a considerable number of students. In total, 215 (39.8%) participants had non-paid occupations; most were students only. The second most frequent occupation included different activities in the provision of services (18.9%), such as cleaners/domestic workers, manicures/hairdressers, caregivers and cooks, among others. Most participants were single (46.9%).

The means the participants mostly frequently used to obtain information included the Internet (68.0%) and TV (66.3%).

Other means used, though less frequently, which were not included in the instrument, were: health workers and healthcare units (1.7%), mobile phones (1.3%), schools and speeches (0.6%) and books (0.4%).

In regard to the women’s sexual profile, 500 women (92.6%) reported past sexual intercourse and 411 (82.2%) of these reported having a stable partner. The 129 (23.9%) students without a stable partner included those who had never had a sexual intercourse and those who no longer had sexual intercourses.

In Table 2, the distribution of the students’ answers concerning their knowledge on Pap Smear Screening is displayed.

The answers presented in Table 2 show that none of the items obtained a 100 percent of correct or incorrect answers, neither before nor after the intervention, though a higher proportion of correct answers was obtained after the educational intervention. Note that most students presented satisfactory knowledge regarding the purpose of the test (92%).

The distribution of answers concerning the knowledge and adherence of the students in regard to Pap Smear Screening is presented in Table 3.

When asked whether they had ever taken a Pap test, 102 (18.9%) women reported they had never taken it. This informa-

tion is of concern because only 40 (7.4%) women reported no past sexual intercourse.

Table 3 - Distribution of students attending evening courses in public schools according to their answers concerning knowledge of and adherence to Pap Smear Screening. Uberaba, MG, Brazil 2014

Variables		N	%
Have you ever heard of Pap Smear Screening?	Yes, but I don't know what it is	57	10.5
	Yes and I know what it is	480	88.9
	No, I have never heard of it	3	0.6
Have you ever taken a Pap test?	Yes, every year	319	59.1
	Yes, rarely	119	22.0
	No, never	102	18.9

Source: data collected by the researcher (2014).

During the application of the educational intervention, the women reported the reasons for not taking the Pap test, which included feeling ashamed and fearing pain. Another important aspect is that, even though they were older than 18 years old, many reported that the fact that their parents were unaware they had initiated sexual activity hindered access to the Pap Smear Screening.

Table 2 - Distribution of students attending evening courses according to answers concerning knowledge on Pap Smear Screening. Uberaba, MG, Brazil 2014

Variables		N before	% before	N after	% after
What is the purpose of Pap Smear Screening?	See the baby using ultrasound	4	0.8	2	0.4
	Diagnose cervical CA	497	92.0	525	97.2
	Prevent CA	39	7.2	13	2.4
What kind of sample is collected?	Cervical cells	516	95.6	531	98.3
	Blood and urine	8	1.5	6	1.1
	Ultra sound device	16	2.9	3	0.6
When are women supposed to start Pap testing?	When sexual activity is initiated	436	80.8	495	91.7
	First menstruation	100	18.5	45	8.3
	After menopause	4	0.7	0	0.0
How often are women supposed to Pap testing?	Once a year	518	95.9	530	98.1
	Whenever menstruation delays	12	2.2	3	0.6
	Only once	10	1.9	7	1.3
Where can the test be performed?	Healthcare units	530	98.1	535	99.1
	Only in specialized clinics	10	1.9	5	0.9
	At home	0	0.0	0	0.0
After the test, you are supposed to:	Stay calm because I am already protected	13	2.4	13	2.4
	Pick up the result and go to the doctor	527	97.6	525	97.2
	Only get the result	0	0.0	2	0.4
Pretest preparation	Not be menstruated and not having made use of any vaginal product in the 48 hours prior to testing	459	85.0	519	96.1
	Being menstruated and not having had sexual intercourse	9	1.7	6	1.1
	Not being menstruated and having a Vaginal douche prior to testing	72	13.3	15	2.8

Source: data collected by the author (2014).

Comparison of the knowledge presented before and after the educational intervention reveals that the participants improved their knowledge concerning the Pap Smear Screening (Table 4). The McNemar analysis revealed statistically significant differences between most of the answers provided before and after the intervention, indicating the intervention was efficacious.

Only the questions, “when is the Pap Smear Screening performed?”, “where is it performed?” and “what to do after getting the test result?” presented a slightly larger number of correct answers because a considerable number of participants had provided correct answers even before the intervention.

Cohen’s d, 0.53, which represents the magnitude of effect, shows that the intervention was relevant to improve knowledge regarding the Pap Smear Screening, as it presented an effect of moderate magnitude. This finding shows a positive difference, reinforcing the importance of educational activities in transmitting information and impacting the level of knowledge of a population.

DISCUSSION

We sought to verify the efficacy of the health education intervention addressing Pap Smear Screening implemented with students attending evening courses: high school, a youth and adult education program, and a teaching preparation program offered by state-owned public schools. The profile of the group was: women aged between 18 and 29 years old, living in Uberaba, MG, attending a youth and adult education program, having non-paid occupations, being single, and using the Internet and TV as the main sources of information.

Note the importance of identifying the sociodemographic profile of individuals who can benefit from programs intended to screen for cervical CA, as these characteristics are related to the access people have to information, especially when considering level of education; though in this study, the participants presented similar levels of education. Note that individuals of

less favored social classes have poorer access to health services, which may restrict access to information concerning measures intended to prevent CA.¹²

In regard to the means the students used to access information, a study conducted with nursing students from the city of Montes Claros, MG, Brazil (2012) verified that the most commonly used sources of information include the Internet and TV.¹³ The media plays an important role in disseminating information to the population, so that health workers and the media should work together in order to transmit knowledge and encourage self-care.

One study conducted in 2010 in a public school in the South of the City of São Paulo, SP, Brazil reports that 87 (64.9%) out of 134 adolescents had already initiated sexual activity.¹⁴ Another study verified that most women with human papilloma virus (HPV) were young, of reproductive age, had initiated sexual activity during adolescence, and inconsistently used condoms during sexual intercourse.¹⁵

These results reinforce the need for preventive and educational measures directed at these women, aiming to inform this population of the risk factors for cervical CA, such as early initiation of sexual activity, having multiple partners, and low adherence to condoms.

In regard to the information collected here regarding answers concerning Pap Smear Screening, most students presented satisfactory knowledge concerning the purpose of the test (92%). A similar study conducted in 2009 with high school students from public schools located in Uberaba, MG, Brazil reports that 85% of the students knew the purpose of the Pap Smear Screening, while 12% of the participants reported it is a test that protects women, impeding the development of cervical CA.¹⁰

A noteworthy fact refers to when women are supposed to initiate Pap testing. The answers indicate that the test should be taken when sexual activity is initiated or after the first menstruation, suggesting that many women do not seek health services at the ideal time.

Table 4 - Distribution of students attending evening courses in public schools according to correct and incorrect answers concerning the Pap Smear Screening. Uberaba, MG, Brazil 2014

Variable	Correct (before)		Correct (after)		Incorrect (before)		Incorrect (after)		McNemar
	N	%	N	%	N	%	N	%	%
What is the usefulness of the Pap Smear Screening?	497	92.0	525	97.2	43	8.0	15	2.8	< 0.001
How is the Pap Smear Screening performed?	516	95.6	531	98.3	24	4.4	9	1.7	0.004
When are women supposed to start Pap testing?	436	80.7	495	91.7	104	19.3	45	8.3	< 0.001
When is the Pap Smear Screening performed?	518	95.9	530	98.1	22	4.1	10	1.9	0.23
Where can the test be performed?	530	98.1	535	99.1	10	1.9	5	0.9	0.227
What to do after getting the test result?	527	97.6	525	97.2	13	2.4	15	2.8	0.815
Pretest preparation	459	85.0	519	96.1	81	15.0	21	3.9	< 0.001

Source: data collected by the author (2014).

It is essential to analyze data because, according to INCA, many women who take the Pap Smear Screening do not get its results. In this context, note that, to successfully screen for and prevent cervical CA, healthcare workers should actively seek these women and ensure the early detection of the disease and consequent cure in case of a CA diagnosis or a precancerous condition.²

In regard to data concerning whether women had ever taken a Pap testing, even though 102 women (18.9%) reported they had never taken the test, only 40 (7.4%) had never had sexual intercourse. This result reflects the importance of providing correct and timely information to those who can benefit from the test, the profile of whom coincides with the profile of women addressed in this study, that is, women aged from 25 to 64 years old who had already had sexual intercourse or were currently sexually active. Hence, nurses stand out as those who can contribute to educational activities, enabling women's access to health services in order to increase the number of those taking Pap Smear Screening.¹⁶

Studies report similar results regarding the reasons women avoid taking the test, such as feeling ashamed, fearing pain, or the fact that their parents were not aware they had already initiated sexual activity. One study conducted in 2008 in a public school located in Ademar, SP, Brazil reports that 41 adolescents had never taken a Pap test, 26.8% of whom said they were afraid while 19.5% felt ashamed.¹⁴

Analyzing these factors is important because these can be obstacles hindering the establishment of behaviors or efficacious actions that prevent cervical CA. Hence, the identification of such factors enables healthcare workers to devise and direct strategies aimed at establishing interventions focused on decreasing barriers and inequalities preventing access to the test.¹⁷

The results concerning the knowledge students had regarding the Pap Smear Screening before and after the educational intervention show improved knowledge; Cohen's *d* reveals there was a positive difference in terms of knowledge assessed at the two points in time.

One study conducted with Hispanic women reports that significant improvement was obtained in the rates of Pap Smear Screening, knowledge concerning cervical CA, and self-efficacy after the educational intervention, showing the importance of health education, especially among vulnerable groups.¹⁸ One study conducted with a population similar to the one addressed in this study confirms the efficacy of educational interventions, as an improvement of 24% in the proportion of correct answers was observed in the questions addressing Pap Smear Screening after the implementation of an educational intervention.¹⁰

CONCLUSION

This study's results lead to the conclusion that the profile of individuals addressed here and who benefited from the

educational activity is similar to the profile of women who should be encouraged to participate in programs intended to control cervical CA, namely: sexually active women aged between 25 and 64 years old. Therefore, the implementation of an educational intervention among the students addressed here was relevant.

We conclude that the knowledge of the population addressed in this study concerning Pap testing improved as the intervention presented a moderate effect magnitude and a positive educational difference was found when the knowledge students presented before and after the intervention was compared. These results reinforce the importance of encouraging educational activities in the health field and that nurses assume this responsibility.

This study's limitation refers to the fact that, due to time constrains, the questionnaire was reapplied immediately after the educational intervention, rather than after a sufficiently long period to verify whether the intervention was efficient in influencing the participants' behavior. This gap in knowledge may encourage future studies in the field.

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